



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2020-1003; Project Identifier MCAI-2020-00962-A; Amendment 39-22059; AD 2022-11-09]

RIN 2120-AA64

Airworthiness Directives; Viking Air Limited (Type Certificate Previously Held by Bombardier Inc. and de Havilland, Inc.) Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Viking Air Limited (Viking) (type certificate previously held by Bombardier Inc. and de Havilland, Inc.) Model DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300, and DHC-6-400 airplanes. This AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI identifies the unsafe condition as cracks and corrosion damage to the aileron internal structure. This AD requires visually inspecting the entire aileron internal structure, correcting any damage found, and reporting the inspection results to Viking. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Viking Air Ltd., 1959 de Havilland Way, Sidney British Columbia, Canada V8L 5V5; phone: (800) 663-8444; email: continuing.airworthiness@vikingair.com; website: <https://www.vikingair.com>. You may view this service information at the FAA,

Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1003.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1003; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the MCAI, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Deep Gaurav, Aviation Safety Engineer, New York ACO Branch, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (516) 228-7300; email: deep.gaurav@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Viking Model DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300, and DHC-6-400 airplanes. The NPRM published in the *Federal Register* on January 21, 2022 (87 FR 3236). The NPRM was prompted by MCAI from Transport Canada, which is the aviation authority for Canada. Transport Canada issued AD CF-2020-05, dated March 13, 2020 (referred to after this as “the MCAI”), to correct an unsafe condition on Viking Model DHC-6 series 1, DHC-6 series 100, DHC-6 series 110, DHC-6 series 200, DHC-6 series 210, DHC-6 series 300, DHC-6 series 310, DHC-6 series 320, and DHC-6 series 400 airplanes. The MCAI states:

Viking Air Ltd. (Viking) received reports of cracks and corrosion damage to the aileron internal structure. During a repair of an in-service aeroplane, an aileron hinge support rib was found cracked at the lower flange along the bend radius near the hinge fitting attachment at wing station

247.29. Preliminary investigation by Viking determined that the observed crack was the result of fatigue. During an inspection of another in-service aeroplane, the aileron inboard rib and the vertical flange of the inboard aileron forward spar near a fastener hole were also found cracked.

The current inspection requirements of the affected aeroplanes do not include a direct inspection of the aileron internal structure. Cracks or other damage to the aileron ribs or to the aileron spar flanges are not detectable from the aileron exterior surfaces. Undetected cracks or other damage to the aileron internal structure could lead to progressive looseness of the aileron at the hinge support rib push-pull rod attachment and subsequent flutter condition and degraded or loss of aileron control.

To detect and correct any cracking or other damage to the aileron internal structure, this [Transport Canada] AD mandates a one-time Special Detailed Inspection (SDI) of all aileron internal structure, including front and rear spars, all aileron ribs and upper and lower skins for cracks, corrosion or other damage, and rectification, as required, of the damaged parts.

This [Transport Canada] AD also mandates reporting of all inspection results to Viking. The reporting of the inspection results is necessary to assess the overall aileron internal structural condition on in-service aeroplanes and to determine additional corrective action based on the results of the inspections.

Viking has published Service Bulletin (SB) V6/0066 Revision A, dated 9 December 2019, (referred to as "the SB" in this [Transport Canada] AD) providing accomplishment instructions for the inspection, rectification of the damaged parts, and reporting requirements.

You may examine the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1003.

In the NPRM, the FAA proposed to require visually inspecting the entire aileron internal structure, correcting any damage found, and reporting the inspection results to Viking. The FAA is issuing this AD to prevent progressive looseness of the aileron at the hinge support rib push-pull rod attachment, flutter condition, and degraded or loss of aileron control, which could lead to loss of control of the airplane.

Ex Parte Contact

After the comment period closed, the FAA requested additional information from Transport Canada and Viking about the factory drilled drain holes in the ailerons. A summary of this discussion can be found in the rulemaking docket at <https://www.regulations.gov> in Docket No. FAA-2020-1003.

Discussion of Final Airworthiness Directive

Comments

The FAA received a comment from one commenter, Mile-Hi Skydiving Center (Mile-Hi). The following presents the comment received on the NPRM and the FAA's response.

Request Regarding Related Service Information

Mile-Hi requested that Viking revise DHC-6 Twin Otter Service Bulletin V6/0066, Revision A, dated December 9, 2019 (Viking SB V6/0066, Revision A), to provide instructions for enlarging the aileron drain holes. Mile-Hi stated that the existing factory-drilled aileron drain holes are 3/16 inch (0.1875 inch) in diameter and are too small to accommodate the borescope used at its facility, which has a diameter of ¼ inch (0.232 inch). Mile-Hi concluded that the existing aileron drain holes will need to be enlarged to accommodate any borescope for the proposed inspection. Mile-Hi also requested follow-on actions such as reducing the enlarged holes to the original size to prevent ingress of nesting insects such as wasps or hornets and static balancing the ailerons. As, in the NPRM, the FAA proposed to require inspecting the aileron in accordance with steps in Viking SB V6/0066, Revision A, the FAA infers that Mile-Hi is requesting that the FAA revise the proposed AD to include these actions.

The FAA does not agree that this AD needs to mandate enlarging the aileron drain holes. The FAA contacted Transport Canada and Viking to obtain information on whether any other Model DHC-6 airplane operators have had similar issues regarding the diameter of the existing aileron drain holes. Viking advised that it has received approximately 170 service bulletin reply forms in response to Viking SB V6/0066, Revision A, and operators have successfully done the borescope inspection with no difficulty. In addition, Viking confirmed that the 0.1875-inch diameter aileron drain hole size is standard per the Model DHC-6 airplane type design, and that commercially

available borescope heads fit into the standard-sized holes (as specified in the equipment list in Section II.A.1 of Viking SB V6/0066, Revision A). Based on this information, the FAA has determined that the borescope diameter is not a fleet-wide issue that needs further attention.

The FAA acknowledges field repairs to replace the aileron skins could have been completed on some airplanes where, during replacement, the drain holes were omitted or manufactured undersized. If field repairs have been done that prevent compliance with the inspection in this AD, then the operator will need approval of an alternative method of compliance. The FAA did not change this AD based on this comment.

Conclusion

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. This AD is adopted as proposed in the NPRM.

Related Service Information under 1 CFR Part 51

The FAA reviewed Viking DHC-6 Twin Otter Service Bulletin V6/0066, Revision A, dated December 9, 2019. The service information specifies procedures for visually inspecting the entire aileron internal structure, including front and rear spars, all aileron ribs, and upper and lower skins; repairing or replacing any damaged part; and reporting inspection results to Viking Air Limited technical support. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

The FAA also reviewed Viking DHC-6 Twin Otter Service Bulletin V6/0066, Revision NC, dated August 29, 2019. The service information specifies procedures for visually inspecting the aileron ribs, including ribs and both sides of the hinge arm;

repairing or replacing any damaged part; and reporting inspection results to Viking Air Limited technical support.

Interim Action

The FAA considers that this AD is an interim action. The inspection reports will provide the FAA and Viking additional data for determining the damage present in the fleet. After analyzing the data, the FAA may take further rulemaking action.

Differences Between this AD and the MCAI

The MCAI applies to Viking Air Limited Model DHC-6 series 110, DHC-6 series 210, DHC-6 series 310, and DHC-6 series 320, and this AD does not because these models do not have an FAA type certificate. Model DHC-6 series 1, DHC-6 series 100, DHC-6 series 200, DHC-6 series 300, and DHC-6 series 400 airplanes specified in the MCAI correspond to FAA Model DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300, and DHC-6-400 airplanes, respectively.

Costs of Compliance

The FAA estimates that this AD affects 33 airplanes of U.S. registry. The FAA also estimates that it would take about 3 work-hours per airplane to comply with the inspection and 1 work-hour to comply with the reporting requirement of this AD. The average labor rate is \$85 per work-hour.

Based on these figures, the FAA estimates the cost of this AD on U.S. operators will be \$11,220 or \$340 per airplane.

In addition, the FAA estimates that any necessary follow-on actions to replace an aileron would take 6 work-hours and require parts costing \$52,243, for a cost of \$52,753 per airplane. The FAA has no way of determining the number of airplanes that may need these actions.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting

for this collection of information is estimated to take approximately 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2022-11-09 Viking Air Limited (Type Certificate Previously Held by Bombardier Inc. and de Havilland, Inc.): Amendment 39-22059; Docket No. FAA-2020-1003; Project Identifier MCAI-2020-00962-A.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Viking Air Limited (type certificate previously held by Bombardier Inc. and de Havilland, Inc.) Model DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300, and DHC-6-400 airplanes, all serial numbers, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC) Code 5700, Wing Structure.

(e) Unsafe Condition

This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI identifies the unsafe condition as cracks and corrosion damage to the aileron internal structure. The FAA is issuing this AD to detect and correct cracks and other damage to the aileron internal structure. The unsafe

condition, if not addressed, could result in progressive looseness of the aileron at the hinge support rib push-pull rod attachment, flutter condition, and degraded or loss of aileron control, which could lead to loss of control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Inspection and Replacement of the Aileron

At the compliance time specified in paragraph (g)(1) or (2) of this AD, inspect the left-hand (LH) and right-hand (RH) aileron internal structures for cracks, corrosion, and other damage and take any necessary corrective actions in accordance with the Accomplishment Instructions, steps II.A. through II.A.3. of Viking DHC-6 Twin Otter Service Bulletin V6/0066, Revision A, dated December 9, 2019 (Viking SB V6/0066, Revision A).

(1) For each LH or RH aileron that has accumulated 16,000 or more hours time-in-service (TIS), 32,000 or more flight cycles (FC), or 10 or more years since first installation on an airplane, whichever occurs first: Within 6 months after the effective date of this AD.

(2) For each LH or RH aileron that has accumulated less than 16,000 hours TIS, less than 32,000 FC, and less than 10 years since first installation on an airplane: Within 6 months after accumulating 16,000 hours TIS, 32,000 FC, or 10 years, whichever occurs first.

(h) Reporting Requirement

Within 30 days after the inspection required by paragraph (g)(1) or (2) of this AD or within 30 days after the effective date of this AD, whichever occurs later, report to Viking the information requested on the Inspection Reply Form, page 7, of Viking SB V6/0066, Revision A.

(i) Credit for Previous Actions

You may take credit for the actions required by paragraphs (g)(1) and (2) of this AD if you performed those actions before the effective date of this AD using Viking DHC-6 Twin Otter Service Bulletin V6/0066, Revision NC, dated August 29, 2019.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

(1) For more information about this AD, contact Deep Gaurav, Aviation Safety Engineer, New York ACO Branch, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (516) 228-7300; email: deep.gaurav@faa.gov.

(2) Refer to Transport Canada AD CF-2020-05, dated March 13, 2020, for more information. You may examine the Transport Canada AD at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1003.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Viking DHC-6 Twin Otter Service Bulletin V6/0066, Revision A, dated December 9, 2019.

(ii) [Reserved]

(3) For service information identified in this AD, contact Viking Air Ltd., 1959 de Havilland Way, Sidney British Columbia, Canada V8L 5V5; phone: (800) 663-8444; email: continuing.airworthiness@vikingair.com; website: <https://www.vikingair.com>.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on May 17, 2022.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2022-11559 Filed: 5/31/2022 8:45 am; Publication Date: 6/1/2022]